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ABSTRACT

Surveyed for their implications on training material development were the training needs of 745 elementary and secondary school teachers and training conditions cited by 40 inservice leaders in 26 school districts. Among the seven clusters of specified teacher needs (including interpersonal communication and administration, assessment and discipline) identified on the Teacher Needs Assessment Survey, developing pupil self and individualizing instruction were designated as the most needed training areas. Questionnaire responses described a wide variety of inservice characteristics including frequency, meeting place, content, and teacher incentives. Analysis of data indicated that inservice topics were usually selected by persons other than the participants, followup and evaluation were inadequate, and there was a need for clearer inservice goals and objectives. Implications for materials development included the need for separate production of inservice and preservice materials, for material design which would allow for individual teachers' needs, and for restricting materials to skill development rather than explication or motivation only. (CL)

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**Teacher Training Needs, Conditions and Materials:
A Preliminary Survey of Inservice Education**

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Report #8, February, 1975

Foreword

In the history of any enterprise, it is useful at some point to take time for perspective. In what might be called the enterprise of producing materials for the training of teachers, we seem to have arrived at such a point. During the past decade, under direct and indirect stimulation of federal funding, a very large number of such materials have been produced through school systems, universities, research and development centers, and regional laboratories. Because these efforts have been largely uncoordinated, the need to survey, classify and catalog this multitude of products eventually became clear. Several summarizing and cataloging projects were undertaken by different agencies, two of which are specifically referred to in the paper that follows. These efforts have yielded useful information about the general content of materials for training. For example, an abundance of materials in some skill areas became evident along with a scarcity or absence of materials in other areas. However, such descriptive product data has left certain larger questions unanswered about the development of materials. It is this broad perspective to which the authors of this paper address themselves.

Specifically, the authors are concerned with two considerations: (1.) the extent to which existing teacher training materials meet the demonstrated training needs of teachers; (2.) the suitability of existing teacher training materials to the conditions of inservice training. The importance of these considerations should be clear. To be maximally useful, materials for training should be concerned with skill areas for which there is some demonstrated need (and thus, in which there is some professional interest). Furthermore, such materials should be suited to inservice training, a setting in which skill development is a primary concern. Any clear "mismatch" with training needs and conditions may well suggest specific guidelines for the future development of materials for training. Thus, this paper (and the survey upon which it is based) provides a new perspective on an enterprise in which many have been engaged.

It should be understood that this is a preliminary survey. It is clearly and specifically limited to the teachers and schools surveyed; caution must be exercised in generalizing the results beyond the kinds of schools and teachers that were involved. In fact, the authors are presently engaged in an extension of this study to a sample of larger, urban school systems. However, the perspective that the authors provide on the "match" or "mismatch" of present teacher training materials to this sample of teachers and to this sample of schools leads to some exceedingly interesting and significant questions about the future development of teacher training materials.

An interesting and important "by product" of this study is the methodology used in assessing the training needs of teachers. It is notable both for its practicality and convenience and for its focus on training needs as defined in the context of classroom instruction itself. With a new emphasis on inservice training, the utility of fully developed instruments such as the one used in this survey seems clear.

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Teacher Training Needs, Conditions and Materials:
A Preliminary Survey of Inservice Education

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It is possible to identify hundreds of sets of materials designed to train teachers in inservice settings. However, little or no evidence is available to indicate how well those materials fit teachers' needs for training or the actual conditions under which inservice training is conducted in most public schools. Surveys and catalogs developed to organize and objectify the enormous number of available products have made no attempt to evaluate the potential usefulness of those products in inservice settings. Products have been designed, for the most part, without any systematic investigation of the actual conditions under which they are to be used. At present, even if developers should raise questions about training needs and conditions, there is no body of direct data available to offer answers.

Because such important questions have gone unanswered, the authors undertook this survey of teacher training needs and school training conditions in several school systems in the midwestern region. In conducting this survey, the authors defined inservice training as any activity formally arranged for teachers through a school system for purposes of improving teaching. Training materials were defined as materials that are designed to lead to the acquisition of an observable, operable skill or set of skills in teaching. Two kinds of data were gathered from these school systems: (1.) data on actual conditions under which inservice activities are conducted and (2.) data on teachers' perceived training needs in certain systems.

This report will first describe and summarize the results of the assessment of teacher training needs. Secondly, it will report information about actual conditions of training within school systems in the survey. Finally, in view of the data gathered in this preliminary survey, the authors will examine the current state of available teacher training materials in order

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to assess their potential usefulness in inservice settings.¹ The goal of this study was to provide an empirical base from which necessary questions about the appropriateness of current training materials could be evaluated and from which guidelines might emerge for more effective product development in the future.

Teachers' Perceptions of Needs for Training

The evaluation instrument described in this section can be used to gather teacher input within a school system in order to monitor inservice planning. For this report, however, it has been used to compile the responses of the teachers sampled in order to offer a special perspective on existing training materials. The reader may wonder why the classroom teacher rather than the teacher educator or the administrator was the source of data in developing and using this instrument. Obviously, the range of desired skill training areas will differ as a function of the group that is asked to respond. However, teacher responses offer a unique source of information that is far too often ignored. Since the basic purpose of training materials (as defined in this report) is improvement in the skills of teachers, the views of that group about the skill areas in which improvement is most needed become highly important. Even within this group, however, the range of needs considered was constricted: areas of need were defined in terms of needs for training. These characteristics distinguish this assessment from other needs surveys, such as the National Education Association survey (NEA, 1971) or the Gallup Poll (Elam, 1973) which attended to more broadly defined problems of the school community.

Instrument Construction

Two primary resources were used to generate the Teacher Needs Assessment Survey. First, categories of teaching skills were abstracted from

¹The reader should be forewarned that the sample surveyed for this report was neither randomly selected nor nationally representative. Selection was based on the size of the system and its midwestern location. Large urban systems which might conduct unique or unusual inservice programs, as well as very small systems which might plan no inservice work at all, were excluded from the sample. Instead, systems with inservice programs that were likely to reflect common practices in this geographic area were selected. The basis of selection was largely a function of the extensive experience of one of the authors in conducting inservice work in the area.

the existing catalogs of teacher competencies. Second, the responses reported in previous attempts to classify teacher concerns or needs were surveyed. On the basis of these sources, a series of 43 items describing a variety of teaching skills were selected for use in the first version of the Teacher Needs Assessment Survey. The items were sorted into seven clusters which had apparent commonality. Teachers were asked to respond to each item of the Survey questionnaire in two ways, indicating (1.) how they saw each training area as a personal need and (2.) how they saw each training area as a need of teachers in general. The purpose of this dual rating was to determine whether any major discrepancy existed between the two points of view. The teachers were asked to indicate on a Likert-type scale whether or not inservice training in a specific area or skill would be beneficial. Demographic data were also collected to indicate years of teaching experience, grade level of teaching, sex of teacher, and subject matter specialty of the teacher. Thus, the responses could be tabulated in terms of specific demographic subgroups across school systems. Data were collected from 745 elementary, junior high and senior high school teachers from four school districts.

Estimates of internal consistency for the instrument were exceptionally high. The reliability estimate for ratings of training needs for "self" was .95 while the comparable estimate for perceived training needs of "others" was .97 for the needs assessment instrument. In spite of the high reliability coefficient for "others' needs," however, certain statistical findings and conceptual problems led to a decision to remove that dimension of the questionnaire from further analysis. An inspection of the adjusted mean ratings for "selves" and "others" indicated that of the 43 identified training need areas, all 43 were viewed as being needed more by "others" than by "self." Further, the correlation between the mean ratings for "selves" and "others" over the 43 skill areas was $r_{xy} = .96$ suggesting that the differences in ratings of "selves" and "others" reduce to a nearly perfect linear transformation.

A number of anecdotal comments written by respondents on the Survey form indicated discrepancies in what they viewed as "others." Suffice it to say that the label was apparently not viewed with much commonality. Indeed, some respondents refused to rate "others" on the grounds that the target group was not specific enough. Overall, failure to respond to

specific items was much more a factor in the data associated with ratings of "others" in comparison to "selves." The mean rate of failure to respond to an item was 3.1% for "selves" and 12.1% for "others." That is, the failure-to-respond rate was four times greater for rating "others" than for rating "selves." Given these methodological and conceptual difficulties in interpreting ratings of "others," the remaining analyses in this report are based only on "self" ratings.

Analysis of Data

The data were subjected to a factor analysis to identify clusters of training needs specified by the teachers. The resultant matrix of rotated factors yielded seven factors, identified and labeled as follows:

1. Interpersonal communication and administration
2. Developing pupil self
3. Individualizing instruction
4. Assessment
5. Discipline
6. Developing personal self
7. Classroom management

While the emergence of these factors is of interest, factors by themselves offer little insight as to the directional trends in responses within the factors. These factors simply reflect sources of common variance among the items.

To compensate for the lack of specificity implicit in factor analysis, the data within the factors were analyzed more closely. To study overall patterns of training needs, ratings of the teachers on each of the items were converted to adjusted mean scores. The adjusted mean rating is an arithmetic transformation of the Likert data into a common format. Overall, perfectly unbiased distributions of such adjusted means would yield an average rating of 3.00. However, there is a tendency in these data (sometimes referred to as a Pollyanna effect) to rate all the items as more positive. The average adjusted mean rating was 2.51, reflecting this bias. Thus, it is more appropriate to compare average ratings within the factors to the overall average rating rather than to the "neutral" 3.00. The result of those comparisons should yield pertinent patterns of training needs from the teachers' perspectives.

Using this basis for comparison, the two factors that represent the skill domains which teachers view as need areas were Factors 2 and 3. The adjusted mean rating for skills described in Factor 2, Developing pupil self, was 2.05 while the mean rating for the skills described in Factor 3, Individualizing instruction, was 1.98. Both of these adjusted means were a full standard deviation away from the overall mean in a direction indicating a favorable predisposition. Furthermore, the cluster of skills defined by Factor 3 was rated differently by teachers in various grade levels. Elementary school teachers rated Individualizing instruction as statistically more important than did junior high school or senior high school teachers. In a similar vein, the cluster of skills associated with Individualizing instruction was rated as much more in demand by less experienced teachers (i.e., those with 1-4 years teaching experience) than by those with 5-9 years experience or 10 years experience.

The first factor to emerge from the factor analysis, Interpersonal communication and administration, was the source of an exceptionally large amount of common variance. However, the adjusted mean rating for that cluster of skills was marked by a clear lack of demand for training. The adjusted mean rating for that cluster of scores was 2.90, almost a full standard deviation in the opposite direction from the composite mean as compared to Factors 2 and 3. Similarly, training in the cluster of skills associated with Factor 6, Developing personal self, and Factor 7, Classroom management, is viewed by teachers as not likely to be beneficial. In fact, the adjusted mean rating of the latter cluster of skills is one and a third standard deviations away from the overall mean indicating a clear objection to training in that area.

The adjusted mean rating for the cluster of skills defined as Factor 5, Discipline, can be interpreted as indicating a generally less than positive reaction by the teachers. However, an analysis by groups of teachers differing in years of teaching experience indicates that the less experienced teachers may be more inclined to view training in this skill area as beneficial.

The results of this analysis contradict the findings of Howell (1973) who found that teachers indicated techniques of discipline, motivation and use of media as principal concerns. While the factor analysis de-

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scribed in this study yielded factors associated with classroom management and discipline, the patterns of response were marked by a less than enthusiastic need for training. In contrast, two factors, Developing pupil self and Individualizing instruction, account for a considerable amount of variance and the overall patterns of response reflect a strong desire on the part of teachers for training in these areas. The first of these factors indicates a clear desire by teachers for training in the affective or social-emotional domain.

Summary

Certain generalizations and suggestions are evident in the data reported in this section. First, the teachers in this survey expressed a need for skill training in the affective domain, represented by the cluster of skills in Developing pupil self, and in the area of Individualizing instruction. (As is suggested in the discussion of available materials later in this report, those expressed needs may lead to particular problems for inservice training.) Second, the differences reflected in the responses of teachers with greater or lesser experience and between elementary and secondary school teachers clearly support differentiated training within inservice settings. We should at least afford teachers some degree of individualization based on their perceived needs. Finally, to ignore the teacher in the early stages of defining training needs fails to make sense for a variety of reasons, not the least of which is the patronizing effect upon teachers when academicians or administrators are the primary source of decision making about teachers' professional training. Far too often those decisions are based on convention, current trends or expediency rather than on actual need. Also, there are clear motivational reasons for including teachers in the planning stages of training material selection and development since inclusion of the teachers at a primary "choice point" will be more likely to lead to individual interest during actual training. It is also financially unsound to invest funds in training that has little relevance to teacher needs.

Training Conditions in Inservice Settings

As indicated previously in this report, the survey of training conditions was designed to yield information on certain characteristics of inservice training having implications for the design of teacher training materials. A questionnaire was prepared and sent to selected schools in five midwestern states. School systems ranging in size from an enrollment of approximately 5,000 elementary students and 2,000 secondary students to an enrollment of approximately 12,000 elementary students and 6,000 secondary students were selected. Large city systems, e.g., Chicago, Detroit, etc. and the very small systems were eliminated to ensure relatively equal size and common administrative and budget potential for dealing with inservice problems.

The school systems were initially contacted by telephone in order to identify the person or persons in each system who had major responsibility for directing inservice programs. Questionnaires were then mailed directly to those individuals. A total of 40 individuals from 26 school systems responded to the questionnaire and the data was analyzed as part of the preparation for an inservice workshop conducted in March, 1974.

Questionnaire Results

The first section of the questionnaire concentrated on general descriptive information. The authors were interested in knowing whether inservice programs were compulsory or voluntary, who participated, and how the programs were organized. Nine school systems reported that their inservice programs were compulsory; 11 had voluntary programs; and 6 followed a mixed policy. Most systems reported that they include teachers, paraprofessionals and administrators in their inservice activities.

The organizational patterns varied widely. The majority of the systems reported a preference for separating elementary and secondary teachers for inservice programs. Within that basic pattern, secondary teachers tended to be divided by subject area interests and elementary teachers by schools. Only one system reported that they organized by grade level and two systems reported using teacher interest as a basic organizational criterion.

The second section of the questionnaire sought information about availability of equipment, nature of facilities, and policies which influence the nature of inservice education programs. The school systems all reported a variety of equipment available for use. Sixteen millimeter projectors, slide and overhead projectors, audiotape and videotape recorders were available in all schools; professional libraries as well as audio-visual collections (e.g. slides, films and tapes) were available in most. Equipment availability does not seem to be a major problem. Still unanswered, however, are questions regarding the location of and accessibility to equipment.

School districts appeared to be ingenious in their selection of sites for inservice activities. School classrooms, libraries and auditoriums appeared to be the most popular locations. The gymnasium, audio-visual center, music room and the central administration building were frequently used for training. Non-school facilities, and even school basements and hallways, were occasional locations for inservice activities among both large and small districts.

It is not difficult to understand why schools use such varied facilities for inservice training when information about the amount of time allotted for those activities is considered. Twenty-one of the 27 systems included in the survey reported that they devoted from less than one day to four days per semester to inservice training. Only three systems reported using four or more days per semester for such training. Two systems reported inconsistent time policies.

When asked who usually selected or developed their inservice programs, the respondents most frequently reported that it was the curriculum coordinator or the principal who attended to that task; seven systems made use of a faculty council; and six made occasional use of outside agencies. Other responses included: the superintendent, individual teachers and various school committees.

Incentives for teachers who attended inservice activities varied greatly among the school systems reporting. Incentives included use of special payment to participants, salary increments and college credit. Two systems reported using promotions and special awards for their teachers. Boards of education generally provide for some released time for their teachers to participate in inservice programs.

Only two systems reported no budget allocations for inservice activities. In those systems where allocations were made for inservice activities, funds allocated for this purpose were most frequently used to support released time for teachers, payment to speakers, and payment of travel to inservice meetings. Eleven school systems reported paying per diem to teachers. Other expenditures include rental for facilities and purchase or rental of instructional materials.

While the authors of the questionnaire had their ideas of what specific activities constituted inservice education, they did not know what the school systems would include under this heading. While the range of responses was wide, the most frequently identified activities were:

- school or district one-day program with outside speaker
- textbook publisher's instructional program
- state or national convention
- college credit for courses taken during school year
- building-sponsored workshops
- department-sponsored instructional sessions
- summer college programs
- summer travel programs

Other activities reported by at least one system included:

- individual consultants for teacher
- summer curriculum study
- individual study by teachers

The final set of questions attended to those areas of inservice training most in need of improvement. Two areas were of interest to all respondents: a need for (1.) clearer inservice goals and objectives and (2.) better evaluation of training along with follow-up activities after initial training. A third area of concern was improved communication between school administrations and individual departments about inservice needs and accomplishments.

When asked to identify their needs for specific training materials, the respondents listed materials about specific topics in the following

order:

- instructional techniques
- assessing teacher-effectiveness
- assessing student growth
- identifying instructional program strengths and weaknesses

In general, the responses to the questionnaire tend to show inservice programs as being widely divergent in content and format. Topics are most frequently selected by someone other than those for whom inservice training is intended; evaluation and follow-up is virtually non-existent. The need for inservice training is not questioned but the responses of those surveyed indicate a need for careful re-examination of training conditions.

A General View

The results of this preliminary survey support the more informal impressions of one of the authors who has participated in numerous inservice training programs over a broad geographic area during the past ten years. These impressions, described below, may serve as an additional source of information to augment the questionnaire.

Most invitations to participate in inservice programs come by mail and are at best very general: "We are having an inservice day on Saturday, March 17, for the elementary teachers in our district. Would you be available to talk to us about reading?" This quote from a recent invitation is typical. The decisions about what specific things will be discussed and how the program will be conducted are left to the visiting consultant. It is generally true that he or she will not know the school district, their needs or wishes, or any other information that would help to make the program meaningful for teachers. Perhaps the "first person" report of this author as an inservice training consultant best conveys the real flavor of inservice efforts:

"A review of my pocket calendars from the past three years indicates that almost all of the programs I have participated in have been on Saturday, late afternoon, or evening. The exceptions have been the one or two day sessions frequently held prior to the opening of school. Sessions sponsored by professional organizations and state departments of public instruction are more likely

to use at least some school time, but also include some of the teachers' out-of-school time as well.

Even though the results of our survey indicate a wide selection of equipment available, I have found that it is essential for me to carry my own equipment whenever possible. Tape recorders in schools tend not to work; to have no take-up reels and/or no microphones. Extension cords are frequently not available and they are a 'must' since plug-ins are scarce and are usually placed in inconvenient locations.

As most of the sessions are held in classrooms, hallways, basements and gymnasiums, blackout shades are rare items. Screens tend to be old and in poor working order. Further, it is my experience that the equipment is kept 'somewhere else' and has to be hauled in especially for the meeting.

I have been genuinely impressed with teachers' eagerness to get help with their instructional problems. I am equally convinced that my efforts during a half day or less have been of little help to those teachers. Rarely is there an opportunity for individual consultation with teachers or for follow-up visits with them in their classroom environment. Where these opportunities have prevailed, teachers report considerable satisfaction with their efforts to improve instruction.

There is evidence from conversations with teachers in inservice settings that they are frequently in doubt about the expected outcomes of the sessions. They feel that there may be a 'hidden agenda,' that someone has identified a problem that they know nothing about. This situation frequently puts teachers on the defensive.

The majority of the programs tend to include teachers from several schools within the district and a range from beginning teachers to those with many years of experience. The size of the group and its diverse nature limit the opportunities to deal with the specific needs of the teachers.

The need for some type of inservice work is not questioned. However, it may be that those responsible for such programs have not found appropriate alternatives to large group, 'one-shot' presentations held in awkward settings at inappropriate times."

Training Materials in the Perspective of Needs and Conditions

In order to assess the appropriateness of current teacher training materials for inservice training in actual school settings, the authors looked at the present state of training materials in the light of data from the particular school systems included in this survey.

Although there are several views of what criteria differentiate training materials from instructional materials in general, the following criteria were emphasized in this survey:

- (1.) Training materials are designed to lead to the acquisition of an observable, operable skill or set of skills in teaching.
- (2.) The design of a specific set of training materials should at least have "face validity" in terms of its expressed purposes. In other words, it should be plausible that teachers can achieve the intended skills through use of the materials.

When the term "training materials" is used in this discussion, then, the authors mean materials which aim for skill development and are so designed that there is reason to believe they will effect their purpose.

The number of products designated as inservice training materials is staggering. The Stanford Center for Research and Development in Teaching in its report, Teacher Training Products: The State of the Field (1974), identified 547 such products. Since theirs is a selective review, based on an even more restricted definition of training materials, there must be an even greater number of products available to schools.² Such materials can be described along many dimensions according to various purposes.

²Briefly, the Stanford definition stipulates that training materials must provide the occasion for practice in performing a skill.

For example, the Stanford Report attempts to catalog a whole range of teacher training products by describing and objectifying their important features; these features were identified through the analysis of a 117-item product description form. The following major categories are listed in the table of contents:

- Developers
- Subject Matter Specificity
- Target Audience
- Grade Level Specificity
- Target Outcomes for Teachers
- Target Outcomes for Students
- Product Availability
- Nature of the Training Situation
- Phase of Teaching in Which Skills Are Used
- Field Test Results

The report, Resources for Performance-Based Education (Houston, 1973), distributed through the Multi-State Consortium on Performance-Based Education, sorts the training materials it includes according to certain teaching competencies or stated outcomes. Differences in the two catalogs suggest that there is currently no common agreement as to the most appropriate set of categories. However, since the Stanford Report is the more specifically defined of the two and since it uses a more complete analysis of the characteristics of the materials, it will be used as the source of descriptive data in the present report.³

With the above definition of training materials and with some notion of the types of products that are available, the authors will next examine the "fit" of the design and stated outcomes of such materials with the conditions of inservice training and the perceived training needs of teachers.

³ All percentages describing training materials in this section are taken directly from the Stanford Report. According to the authors' understanding of the analysis used in that report, its categories are not mutually exclusive. Thus, a set of materials can fall into one or more categories simultaneously.

Design of Materials and Training Conditions

Three elements of design seem especially pertinent to use in school settings: (1.) the time materials take for completion; (2.) the human resources needed to effect their purpose; (3.) the physical resources they demand. In terms of these design characteristics, a number of questions can be raised about the current state of training materials and their probable usefulness in actual school settings.

The time demands of any set of training materials must be a major factor in selection and adoption. Time is a critical consideration in any systematic operation and schools are especially vulnerable to its limits. Teachers can be expected to give only so much time to the school and have little flexibility in their normal work day. Traditionally, inservice training has been isolated from other kinds of teacher work and concentrated in one or two-day sessions in which teachers report to school, but students are released.

In examining training materials, it is important to ask if the amount of time required by most sets of materials is realistic in terms of the amount and spacing of inservice time set aside in the school year. Of the 26 school systems surveyed, only three reported spending more than four days each semester for inservice activities. The majority (21) reported spending less than one day to four days per semester. The Stanford Report found that the amount of time required to complete training for the materials they listed ranged from one to 640 hours with the median being eight hours. The time requirement at the 25th percentile was three hours; the time requirement at 75th percentile was 15 hours. Since training time does not generally allow for time to gather evaluation data, a significant number of the school systems in our sample would find it difficult, if not impossible, to work with more than one set of materials with any given set of teachers per semester. Those materials which require more than eight hours of training would be impractical for systems not having several consecutive days available for inservice work. Assuming that these school systems will continue to arrange inservice time in a similar fashion, materials calling for protracted training periods will remain impractical.

A parallel examination of the human and physical resources needed for the use of training materials leads to similar problems for schools.

The Stanford study reports that a large number of materials are self-administered or are self-instructional in format. Use of this type of material typically implies a quiet place where materials and needed equipment can be left indefinitely so that teachers can take advantage of training in short intervals during the day. In fact, teachers seldom have enough free time during their school day to devote effort to self-instruction and even if problems of time could be worked out, few school systems are set up for the space and equipment demands of this training format. Our data from the school systems surveyed show that every kind of facility is used for inservice work: auditoriums, libraries, classrooms, even hallways and gymnasiums. Only better equipped schools have conference rooms and teacher work areas that are sufficiently isolated and quiet to allow for self-instructional work. In schools where this space is available, there are often problems of keeping equipment secure and available for the constant use this mode of instruction demands. Nonetheless, the availability of such an alternative form of training, assuming sufficient evaluative evidence is available to support its usefulness, might open the door to alternative modes of inservice training in non-school-controlled environments (e.g., at home).

In terms of human resources, other types of training materials present comparable difficulty. Of the materials listed in the Stanford Report, the number that require a supervisor or leader thoroughly familiar with the content is approximately equal to the number that are self-instructional. If there are no personnel available in school systems to assume such a specialist's role, the system is forced to hire the developer, pay to have someone trained by the developer, or reject the set of materials. Schools in our sample reported a variety of school personnel who selected or conducted inservice programs. Especially in the smaller school systems, all kinds of personnel performed this function: curriculum coordinators, superintendents, principals, various sub-administrators, and in four cases, faculty councils. In the larger school systems, curriculum coordinators were cited most frequently as those in charge of inservice decisions. Rarely was there a person listed whose sole job was inservice planning and directing, and then only in large school systems. In light of this task distribution, it is difficult to see where school systems can find individuals with the time to

familiarize themselves with materials sufficiently to assume such a specialized training role.

The format of training materials also tends to put a strain on the physical resources of school systems. Space, equipment and money are all at a premium in most public institutions, and schools are no exception. For example, as the authors have pointed out earlier, those responsible for inservice training seem to use any available space to accommodate inservice functions. Even non-school facilities such as local college or university buildings are borrowed for such occasions.

Most systems reported a surprising range of audio-visual equipment. All of the schools surveyed reported owning film, slide and overhead projectors. All owned audiotape recorders and nearly all reported having videotape recorders. In view of the personal account of one of the authors earlier in this report, however, there is some doubt about the accessibility of the equipment required by many multimedia materials. For example, if it were possible for a group of teachers to work during school hours on a training package requiring an audiotape recorder, how much advance notice would their media center require for them to use it? Would it be in working order with take-up reels and extension cords readily available?

Although the cost of many inservice materials is relatively low and although many can be rented for a short time at reasonable rates, budgets for such products may be corresponding "skimpy." Only 15 of the 26 school systems surveyed indicated specific budget allocations for inservice training materials. All but two schools in the sample did allocate money for inservice speakers and instructors, however, indicating that this is the predominant method of instructing teachers. This finding in the specific school systems surveyed is consistent with the personal experiences of people who have been sought as inservice consultants, as has been pointed out earlier in this report. The Stanford Report observed that the cost of the products for which information was available ranged from \$00.00 to \$6,000.00. The median purchase price was \$3.00; the price at the 75th percentile, \$17.00. The median rental price was \$45.00 for those few products listed for which such information was available. The Stanford authors found that most products cost less than \$20.00 to purchase with very few materials costing more than \$100.00. However, if a school system

was extremely interested in purchasing a set of materials costing several hundred dollars, would budget considerations force it to seek less satisfactory materials? The schools surveyed in our sample had some money available for training materials, but how much they would be willing to allocate for a specific set of materials remains a question. It is interesting to note, however, that respondents checking those areas of inservice training which they felt most needed improvement in their districts, passed over items such as "more inservice personnel" and "better materials for instruction" to concentrate on "better evaluation and follow-up" and "clearer inservice goals and objectives." It may be that the generally low cost of training materials works to minimize the problem of obtaining such materials as far as administrators are concerned. Or, it may be that current materials are not pertinent nor practical enough to tempt administrators with already strained budgets.

Objectives of Materials and Training Needs

Although there are significant disparities between product design and inservice training conditions, there seems to be an even greater gap between the stated purposes or objectives of such materials and teachers' perceived training needs. One of the most striking and persistent findings in the survey of teachers in this report was the concern they felt for gaining skills in "developing pupil self." The Stanford Report points out that skills in the domain of social-emotional outcomes, which includes categories most clearly aligned with developing pupil self, were infrequent objectives in comparison with those in the cognitive domain. The authors of that report conclude, "For whatever reason, product developers seemed to place more emphasis on cognitive objectives than on social-emotional outcomes" (p.46). While teachers in our sample showed a great deal of concern for stimulating growth in such personal factors as the development of attitudes and values, the Stanford study reports that fewer than 5% of the materials it lists deal with the objective, "learning of values." Further, training materials listed in the Stanford Report that treat other social-emotional objectives, such as "developing emotional independence" and "learning social roles," comprise very small percentages (e.g., less than 5%) of the total number of materials examined. Only training materials with the stated outcome "increase of interest" fall

anywhere near the 10% level. In fact, the two most frequently stated objectives of those materials in the social-emotional area, "increase of interest" and "motivation to achieve," are clearly linked to cognitive outcomes. If our data are at all representative, either the emphasis that developers have placed on the cognitive domain is not in line with the perceived training needs of teachers or those perceived needs reflect a new concern to which developers should address themselves.

Another major area of concern for teachers in our sample was that of "individualizing instruction." In reviewing the more than 600 materials included in their report, the Stanford group found approximately 100 products which were aimed at some aspect of individualizing instruction. Developers are apparently attuned to interest in this area of teaching skill but the correspondence of these materials to the particular concerns of the teachers in our sample is unclear. The Stanford Report points out, for example, that the concept of "individualizing" is quite global and can apply to such specific matters as assessing entry behavior as well as to broader approaches such as the University of Pittsburgh's "Individually Prescribed Instruction." Even a quick glance through catalogs such as Resources for Performance-Based Education, cited earlier, will show under the heading of "Individualizing Instruction and Conducting Individual Activities" such diverse products as modules on student contracting, films on programmed learning, and audiotapes dealing with educational innovation. The Stanford group concludes that most of the products included in their survey are aimed at a more general concept of "individualizing."

Teachers in our survey felt that inservice training should help them select and develop materials and activities for individualizing instruction as well as help them implement and supervise these activities once developed. It is impossible to tell from the survey whether this expressed need by the teachers in our sample grew out of current educational interest in individualizing instruction or out of actual experiences with students in the classroom. Are teachers expressing a need to feel "up-to-date" in their teaching methods or are they asking for help in dealing with actual classroom problems? If real student differences motivated these teachers to ask for inservice help, then materials designed to operationalize this popular, but often global, concept should serve to specify those aspects of individualized instruction which are most critical in the classroom.

Another area of expressed concern was for improving evaluation and assessment skills. Teachers surveyed for this report emphasized a need for help in diagnosing basic learning difficulties, identifying student attitudes, and involving students in self-evaluation. According to the Stanford data, training materials in this area primarily concentrated on preparing objectives, assessing and evaluating student cognitive behavior, and self-observation for teachers. Although that report does not include a category "diagnosing basic learning difficulties," it does include the category "assessment of student cognitive behavior." This category included 22% of the total number of materials reviewed, but there is no way of knowing how many of these materials touch on the diagnosis of learning difficulties. On the other hand, only 3% (or 22 products), were aimed at helping teachers involve students in self-evaluation. Less than 15% of the total number of materials listed in the Stanford Report fell into their category, "assessment of student social-emotional behavior." Developers producing materials in the area of assessment and evaluation seem to focus on cognitive behavior in students and on self-observation for teachers. Teachers in our sample, on the other hand, were concerned with involving students in the evaluation process and assessing cognitive and/or emotional difficulties which interfere with learning.

Implications for Development

By examining a few selected school systems, the authors have tried to raise questions about the current state of training materials development in terms of actual inservice training conditions and teachers' perceived training needs. In the schools surveyed, there seemed to be notable discrepancies between the design of materials and the conditions of training. In addition, the stated objectives of materials seemed generally at variance with teachers' perceived needs. What kind of questions do such discrepancies suggest for the development of training materials in the future?

In examining a large number of products at first hand as well as assessing the data reported, the authors have developed a concern about three aspects of development. First, the authors question the practicality of developing training materials for use with preservice and inservice teachers in common. The Stanford group reports that of the 547 materials

they identified for use in inservice work, 505 were designed for preservice teachers as well. Their report also points out that most materials are developed by teacher training institutions. This may mean that developers tend to design materials originally for preservice teachers, assuming that inservice teachers who feel a need for work on that skill can use them also. In the university or teacher college setting, a self-instructional format as well as a format requiring a leader or supervisor highly familiar with the materials makes sense. In school settings, as pointed out earlier, either format can cause difficulty. With the settings so very different in preservice and inservice training, certainly a format designed for one may not be practical for the other.

Not only are the settings very different, but the skills needed by inservice teachers may be quite different from those needed by preservice teachers. Teachers in our survey were least interested in training on the cluster of skills associated with classroom management and administration. Inservice teachers in our sample did not feel a need for work on routine tasks such as arranging the physical environment, assigning grades, or deciding about grouping for instruction. They were also relatively uninterested in skills associated with the development of themselves in the personal realm; they felt little concern for improving their own sense of responsibility or developing a broad acceptance of self. Materials designed for skill development in the area of performing administrative duties and developing personal skills might be more interesting to preservice teachers than to teachers already functioning satisfactorily in the classroom.

Perhaps one change which might constructively improve training materials would be a separation of the development of preservice materials from the development of those intended for inservice training. If developers begin to consider actual school conditions and teachers' perceptions about their own training needs, this separation may occur naturally. Developers may find, as the authors have in this limited survey, that conditions and needs in inservice training point toward a different design and different statement of outcomes for materials.

A first hand look at training materials has caused the authors to inquire about a second aspect of development: are such materials frequently too systematic in format? Are they designed in such a way that they allow teachers little or no flexibility? Do they create impressions

of imposition and condescension? If training materials were designed so that subunits could be easily sequenced and arranged according to the special purposes and needs of the teachers using them, might they not be more practical? For example, if materials focusing on "individualizing instruction" were designed so as to isolate the specific skills involved and these skills were incorporated into compact subunits, teachers could select and arrange their own training units. In this way, teachers would have well-designed instruction but would have some choice and control over the materials. As has been pointed out earlier, teachers, like students, have individual strengths and weaknesses. Training materials designed so that teachers might choose those subunits applying most directly to their own needs would clearly help to effect the differentiated training, referred to earlier, that is so necessary in the training of teachers.

Having experience with many kinds of materials has also prompted the authors to question a third aspect of product development. Although developers and catalogers designate their products as training materials, all too frequently these materials are designed to define and state a problem or to motivate towards skill development rather than to actually train teachers in that particular skill. The "informal message" from the inservice training personnel in our survey was that good materials should have immediate and observable effects on teachers or on their students. Whether this expectation is reasonable or not, the authors feel that school personnel are often justified in their dissatisfaction with the training materials they examine. Films, kits and modules that define issues or discuss the importance of a skill do not satisfy those responsible for inservice training. Teachers want help with immediate classroom problems and inservice training personnel want inservice training that teachers define as helpful.

In short, this survey points up several ways in which training materials might better fit teachers' perceived needs and school training conditions:

- (1.) Separating the production of inservice training materials from that of preservice training materials so that inservice settings and practicing teachers' needs are the major factors considered when designing such materials.

- (2.) Designing the components of training materials in such a way that they can be selected and sequenced to fit individual teachers' needs.
- (3.) Taking care that materials designated as training materials are really centered on skill development rather than on explication or motivation only.

Promoting changes in the design and content of training materials to bring them more closely in line with actual school conditions may be only part of the solution to practical and useful inservice training for teachers. The findings of this survey suggest changes in inservice programs, as well as in training materials. In the case of almost all of the school systems surveyed, the amount of time and the resources available for inservice training were negligible in comparison with the need for meaningful inservice training expressed by both teachers and administrators. Obviously, more time and money must be allocated in order to achieve the kinds of goals these teachers and their supervisors set for themselves. Four system-sponsored days per semester, which was the maximum reported by all but three systems in this study, seems an inadequate amount of time in which to conduct training in any but the most narrowly-defined skills. Either schools must find ways in which more time, and better-distributed amounts of time, are available for inservice training or teachers must be motivated (by salary increases, class credit, or other kinds of recognition) to spend their own time on such training.

Since both self-instructional and supervisor-led design can cause logistical problems for school systems, developers and school systems need to consider alternative ways of designing and using materials. Developers might well devise ways to modify the self-instructional format to make it better adapted to time and resource limitations. For example, self-monitoring of teaching behavior and peer instruction, both derived from self-instructional designs, might prove to be useful and practical techniques in school settings.

However, even though developers work at modifying self-instructional designs to fit school conditions more closely, it is unlikely that the inservice training of teachers can be conducted in the foreseeable future without the use of materials requiring expert assistance. Therefore, school systems must find ways to provide such assistance from personnel

within their systems or allocate funds for outside supervisors. It is possible that publishers and distributors of training materials could plan for the kind of assistance to school systems that textbook publishers presently provide with curricular materials. In many cases, this kind of help might be enough to enable schools to use some kinds of training materials they currently find infeasible. Intensive training seminars, arranged at practical and convenient locations and times, could assist school personnel in gaining the skills necessary to supervise and conduct many kinds of training materials.

It is also possible that extra-system training (e.g., conducted or sponsored by professional organizations) could assist teachers in upgrading their teaching skills. Since the authors define inservice training as school-sponsored training, these possibilities lie outside the scope of this particular report.

Requests for help in the past have demonstrated that those charged with planning and directing inservice work in public schools look to universities and their trained personnel for assistance with their task. If effort is concentrated on developing materials designed for actual conditions and needs, such help can be more realistic and productive for schools and teachers.

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